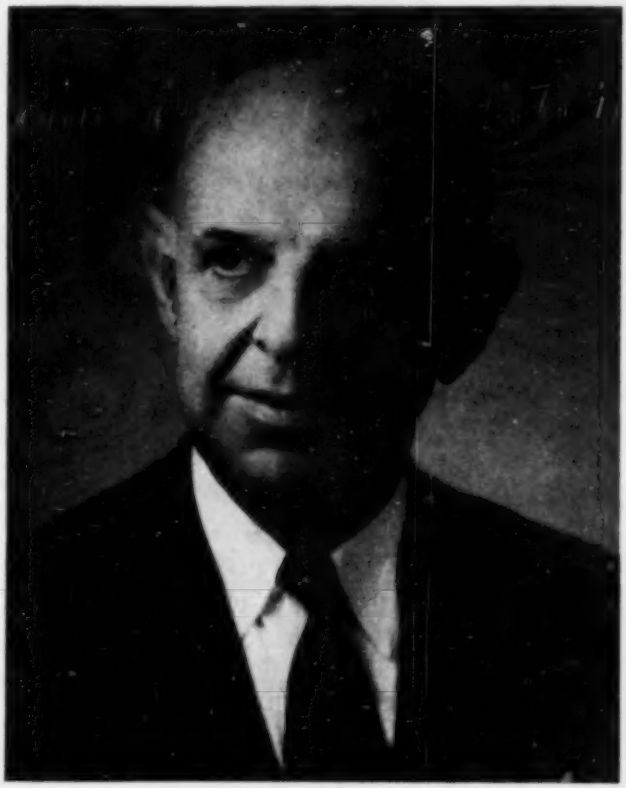
THE CHEMIST

MARCH 1950 VOLUME XXVII No. 3



DR. W. T. READ, HON. AIC

Chairman, Washington Chapter

(See page 79)

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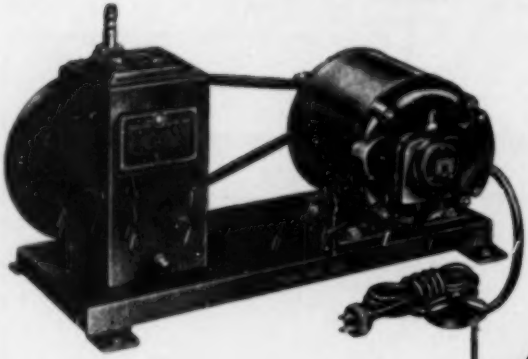

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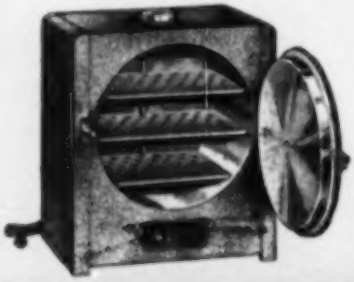

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SCHEDULED FOR EARLY ISSUES

Toxic Materials in Industry, by Dr. Lawrence T. Fairhall, F.A.I.C.
The Increasing Responsibilities of the Chemist, by Ralph Lamenzo, F.A.I.C.
The Chemistry of Intelligence, by Dr. Edward Podolsky
An Employment Advisory Service, by Dr. W. I. Harber, F.A.I.C.
Award of Honorary Membership to Frank G. Breyer, F.A.I.C.
What the AIC Can Do for the Government Chemist, by Dr. J. David Reid, F.A.I.C.
What the AIC Can Do for the Industrial Chemist, by Dr. Simon Miron, F.A.I.C.
Chemists Over Forty-five, by Herbert F. Schwarz, F.A.I.C.
Employment Contracts, John A. Dienner, F.A.I.C.
The Chemists' Future in the Synthetic Dye and Pigment Industry, by Dr. Hans Z. Lecher, F.A.I.C.
Export Control of Chemicals in 1949, by L. N. Markwood, F.A.I.C.

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Cover Picture

Dr. W. T. Read, chairman of the Washington Chapter, AIC, is scientific adviser, Research and Development Group, General Staff, Army, Pentagon Building, Washington 25, D.C.

After receiving the A.B. and A.M. degrees from Austin College, Texas, the M.A. degree from the University of Texas, and the Ph.D. degree from Yale, he served as instructor in several universities until World War I, when he was commissioned a first lieutenant in the Chemical Warfare Service of the U.S. Army. Since World War I, he has been assistant professor at Yale, professor and head of the chemistry department of Texas Technological College, and dean of the School of Chemistry at Rutgers. In 1943, he was appointed chief of the Professional Allocations Section of the War Manpower Commission until 1946, when he accepted his present position.

Dr. Read has long been active in professional work. In 1935, he was elected councilor of THE AMERICAN INSTITUTE OF CHEMISTS, and re-elected to this office in 1938. From 1940 to 1942, he held the office of vice president of the Institute. He also served two successful years as chairman of its membership committee. In 1949, he was awarded Honorary AIC Membership. He was a member of the Board of Directors, vice president, and president of the Chemist Advisory Council, Inc., an organization that grew out of the Committee on Unemployment and Relief for Chemists and Chemical Engineers. His experiences during this period convinced him that chemists should plan ahead for emergencies.

As chairman of the Washington Chapter, Dr. Read has organized three large committees: (1) A committee on professional employment to lay plans in advance of a possible future catastrophe such as befell the profession in the early thirties: (2) A committee to cooperate with the colleges and universities in this territory with a view to furnishing speakers, vocational guidance, and information, and (3) A "Talent Search" committee whose function will be to cooperate with all other scientific and professional organizations in locating boys and girls of exceptional ability in their formative years.

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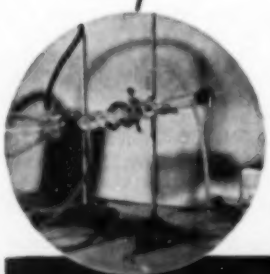

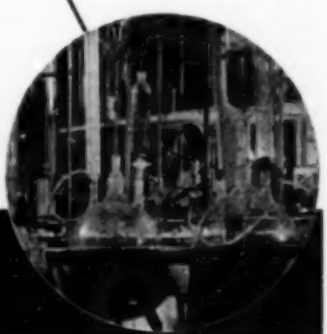

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EDITORIAL

Chapter Representation on the National Council

President Lawrence H. Flett, AIC.

WHEN THE AMERICAN INSTITUTE OF CHEMISTS was organized, the National Council was made an advisory board. In recent years, there has been no instance where the Council's advice has not prevailed; so for all practical purposes, the Council has been the governing body.

The present National Council is made up of ten chapter representatives, nine councilors-at-large, elected for three-year terms, and six present and past officers. During the past year, a serious effort has been made to have the chapter representatives, or alternates for them, present at each Council meeting. This effort has been increasingly successful, and it is interesting to note that at the February meeting, a majority of those present were chapter representatives.

We cannot expect regular attendance from the Los Angeles or the New Orleans Chapter representatives, although we are particularly happy to have them present at the Council meetings, whenever they can arrange to be in New York.

It is not so difficult for the other chapters to be represented. Council meetings generally take place on the second Wednesday of the month. This regular arrangement makes it possible to plan New York visits to coincide with Council meetings.

When a chapter representative cannot be present at the Council meetings, he should accept the responsibility of making certain that there is a suitable alternate who can attend. This should not be too difficult for most of the chapters because of the frequency with which Fellows of the INSTITUTE visit New York.

It has been possible to have a short report from each chapter representative at the Council meetings. As a result, each representative has been able to carry back to his chapter information on the advances made by other chapters. This exchange of ideas has already stimulated beneficial activities in the chapters.

Attendance at the Council meetings also serves to give the representatives, and through them the chapters, a far better idea of what the INSTITUTE is doing.

In the coming chapter elections, all candidates for chapter representatives should look on that office as something more than a chapter honor.

Any good which a chapter can gain by contacts at the National Council meetings must be obtained through a loyal and dependable chapter representative.

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Voorhees to National Motor Bearing Company

Dr. Vanderveer Voorhees, F.A.I.C., formerly patent attorney with the Standard Oil Company (Indiana), Chicago, is now director of research of National Motor Bearing Company, Inc., Redwood City, California, which is expanding its research program.

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Whether you intend changing your position; starting a business; applying for or trying to sell a patent; if you have legal, personal, or financial problems; if you wish information on further education or advice on any problem, write in strict confidence, to our

Chemists' Advisory Committee
c/o THE CHEMIST,
60 East 42nd St.,
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Where necessary, a personal interview can be arranged.

Take advantage of the C.A.C., which includes research and personnel directors, business executives, sales development and market research men, a lawyer, professor, technical author, statistician, a consultant, a technical advertising and publicity executive, a process design engineer, and a chemical distributor. (See page 102)

Firth to Wilbur & Williams

Frank E. Firth, F.A.I.C., has joined the Wilbur & Williams Company, Boston 15, Mass., as manager of the Marine Sales and Engineering Division. Mr. Firth started work with the U.S. Fisheries in 1928, and was in Government service until 1945, when he became manager of the Research Department for the Linen Thread Company. He is collaborating with Dr. D. K. Tressler and J. M. Lemon in the preparation of new material for "Marine Products of Commerce," which will be published this Spring.

Opportunities for Chemists

(A Panel Discussion held by the New York Chapter, AIC. Several of the talks and part of the discussion are presented here for the benefit of the young chemist.)

How to Progress

Dr. W. E. Kuhn, F.A.I.C.

Manager, Technical and Research Division
The Texas Co.

THE young chemist has a desire to move ahead in his profession. His question is obviously, "How can I do that and how fast can I move?" When the young chemist goes into an organization, he is likely to be assigned to an analytical unit, a pilot laboratory, or perhaps to technical sales, but wherever he goes, it is my observation that he often forgets one of the basic laws which he knew in high school but forgets by the time he enters industry, i.e., the law of the conservation of matter. It is surprising how often the chemist in the beginning forgets the simple lesson of "heat and material balance." If he could remember that mere fact and apply it to his problems, he would progress faster. He cannot get more out of anything than that which he puts into it. This applies to an analytical problem, a pilot unit study, in fact, to any study he makes. Place the problem in simple terms in front of him, namely, all that goes into it and what he receives out of it. There should be no loss, or he should account for it. He can apply this to himself, that is, what is he putting into his job. Maybe then he will have a better understanding of what has or is happening to him.

The first two years of his employment are usually given over in a measure to learning the language of his industry, so that he will comprehend better the job in front of him. Often-times he forgets that a business has to stay on the black side of the ledger or it ceases to exist. The profession doesn't owe him; he owes the profession something.

After indoctrination is over, he is ready to consider the following advice. The man who attacks one phase of his industry's technical work and studies it thoroughly will gradually become a specialist in that field. Soon he becomes recognized as having these qualifications and then his ability becomes recognized in that field. But if he is to progress further, he must also have a general knowledge of the en-

tire industry in which he is engaged to know where that special field fits into the industry. If young people will follow those two points they are on the road to success.

As suggested, I will touch briefly on a couple of problems typical of those involved in the field of petroleum technical service. Technical service in this case is the service given to the customer who uses petroleum products. (1) The textile industry: When wool or cotton are woven into thread and cloth, it is necessary that the individual threads run parallel to each other. There is the job of lubricating those threads with the proper type of oil. Other problems involve the elimination of static. It is necessary to eliminate the dust that arises from processing. In processing, the lubricant must not affect the final dyeing and must be easily removed. The technical service man must be able to competently discuss and handle any of the phases of the job. (2) Aircraft in flight: Gasoline and lubricating oil are large in volume but a small part of the number of problems involved in the lubrication of a plane. Special lubricants must be supplied for the delicate hydraulic mechanism on which a great deal of dependence is placed; for the propeller which is exposed to water and cold air; for small control bearings; for the lubrication of the wheels used in landing; for the small cables that control flight; for the de-icing medium. Wax is applied to the plane for appearance and to increase the air flow. Likewise, in jet planes there are any number of problems to be studied and handled that concern the lubricants and the fuels. The technical service man must be thoroughly versed in his field to give service to the operator of aircraft equipment.

Finally and in conclusion, I would say that above all there is one thing young people must realize. Connected with progress there is a great deal of hard work over and above the hours spent at desk and bench. Many a successful chemist has said he never worked so hard as he did in trying to keep abreast of developments in a specialized field.

Honor Guest

Dr. James R. Withrow, Hon. AIC, emeritus professor of chemical engineering, Ohio State University, was selected as one of the honor guests of the Fiftieth Anniversary Meeting of the Philadelphia Section of the American Chemical Society held at the Franklin Institute, Philadelphia, Pennsylvania.

Dr. Raymond E. Kirk, F.A.I.C., head, Graduate School, Polytechnic Institute of Brooklyn, was elected, for a three year term, to the Board of Directors of the American Chemical Society.

What The Chemist Can Do For Himself

Dr. Donald Price, F.A.I.C.

Technical Director, Oakite Products, Inc.

THERE has been much discussion in recent years as to the status of the chemist. This has taken the form of many talks before scientific meetings and articles in technical journals. We have heard what industry should do for the chemist, what the chemist can do for industry, and other aspects of the subject.

Dr. Otto Eisenschiml recently gave an address before the Chicago Chapter, AIC, entitled, "The Responsibilities of the Community to Its Chemists." In this talk he told two stories. One concerned a Chicago newsboy who was able to retire at age fifty with savings of $50,000. Upon his retirement his former customers gave a banquet in his honor at which toasts were drunk to his continued prosperity. The speaker ruefully remarked that he never heard of a chemist being able to retire at fifty with or without $50,000!

The second story was about Miss Ethel Barrymore who recently celebrated her seventieth birthday. On this occasion she too was given a banquet at which she received congratulatory telegrams from prominent people all over the world. Dr. Eisenschiml's point is that chemists in spite of the importance of their work to society are not honored with public banquets.

Why was it that these people were publicly honored? For one thing because people knew them and understood their work. That newsboy probably stood on a Chicago street corner for twenty-five or thirty years and gave each of his customers a smile as he handed him his newspaper. Miss Barrymore's face, gestures, and the famous Barrymore mannerisms are known to millions of theatre—and movie-goers in every walk of life. They understand her work because she portrays characters that they can understand.

We cannot expect recognition and appreciation of our work, unless people know who we are and understand what our work means. The more technical this work happens to be the more pains we have to take to make it clear to laymen.

As a contrast to the esteem accorded to the aforementioned persons, let us ask ourselves what the public thinks about a chemist. If the public thinks about a chemist at all, it probably visualizes a seedy-looking individual with great horn-rimmed spectacles, baggy trousers, rumpled hair, and a far-away look in his eye, and so absent-minded that he is in danger of falling down an open coal hole. In the public mind this individual's sole delight is to spend his time in a

place called the laboratory compounding evil-smelling concoctions.

Whose fault is it that so many people have this false notion of a chemist? It is yours, and yours, and yours! It is our own fault. We chemists have fallen down miserably in the sphere of human relations. We have been sadly lacking in the art of communication—the art of communicating our ideas to non-technical people.

What can we do about it? There are many things, I think, of which the following are a few:

1. In our everyday contacts with non-technical people, let us make a sincere effort to see things from their point of view. Let us even look at our own work through their eyes. If you put this into practice you will be amazed how your ability to deal with other people will increase, not to mention the fact that you will enrich your own life through a deeper understanding of other people.

2. When talking to non-technical people, talk to them in language that they can understand. Talk the other fellow's language. It is not easy to put chemistry into plain English words of one syllable, but it is what we must strive for, if we want the importance of our work to be appreciated. I have so often seen young chemists, called upon to speak in a conference at which non-technical persons were present, make the fatal mistake of talking way over their heads. It seems to be a kind of defense mechanism on the part of some chemists. But you do not get your viewpoint across this way, and you certainly do not make yourself popular.

3. Last but not least, show some real enthusiasm for your work. So many chemists who love their work far above everything else, go about with about as much animation as a dead fish. We cannot expect our non-technical associates to have enthusiasm for our work if we do not show it ourselves. Enthusiasm is the most contagious thing in the world.

If every young chemist will sincerely put these principles into practice, we will not have to worry much longer about the status of the chemist.

C. W. Rivise, F.A.I.C., will lecture on "Inventions in the Chemical Field," at the Spring 1950 Semester of the Practising Law Institute, to be held in New York, N.Y., March first.

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Opportunities in Plastics

H. F. Wakefield, F.A.I.C.

Development Engineer, Bakelite Division, Union Carbide & Carbon Corp.

THE future development of the plastics industry is limitless in scope. My activities in this industry have been mainly concerned with synthetic resins and particularly synthetic resins based on phenol aldehyde chemistry. The application of these resins is myriad since they are used in molded and laminated plastics, protective coatings, abrasive bonds, friction materials, adhesives, cements, fillers, treatments for paper and cloth, and numerous other uses difficult to classify. Because of the nature of these materials, mechanical properties rather than chemical properties are of primary interest. These properties include hardness; rigidity; appearance; stress strain curves over wide temperature ranges; flexural, textile, and compressive strengths. This does not mean, however, that the services of the chemist are not required or that he is of minor importance. Instead, he is the one individual who can select and arrange molecular structures to provide properties demanded by the service conditions which practical industrial materials must undergo. In this type of industry the chemist provides the raw materials, devises controls for the reactions, and tests for the product, to insure uniformity.

Many types of chemistry are required in the synthetic resin industry. Research and development laboratories require a wide diversification of chemical skills, perhaps the most important of which is that of organic chemistry. But even the organic chemist cannot operate intelligently without the help of physical chemists. In general the ratio of organic to physical chemists seems to be about ten to one. Some of the most important contributions to synthetic resin and high polymer chemistry have come from chemists with sound basic training in both organic and physical chemistry. First concern is with raw materials, natural ones such as cellulose, oils, rubber and resins and the synthetic materials such as benzene, phenol, natural gases and the aliphatic acids and alcohols prepared from them. From these the organic chemist prepares a variety of polymers. The polymers will then be studied by the physical chemist who will be interested in learning about their molecular weights and polymer distributions, using the techniques of viscosity, osmotic pressure, ultra-centrifuge sedimentation, light scattering and fractional precipitation. Studies of the reaction rates of polymerization and depolymerization are important.

In manufacturing operations, chemical engineers are required for process development where familiarity

with organic reactions is of particular importance. The chemical engineering training is most necessary for plant operations. Many chemists are needed in the testing and quality control laboratories and skill in organic, physical and analytical chemistry are requisites.

Over the past decade, there has been a growing realization that industry's most serious problem is to find a means whereby marketing, that is, the sale, distribution and service of products, can keep pace with research and manufacturing advances. This field could very well be the largest of all potential opportunities for chemists and chemical engineers. At the present time this is particularly true with the larger companies, but this can be greatly extended when the small manufacturer becomes aware of the fact that he can increase his efficiency by employing technical men. However, the man who works for a small business concern will probably not be what we have always called a chemist. He must know, in addition to the general reactions of chemical materials, the basic elements of physics, strength of materials, steam and electricity, and perhaps as important as any, cost accounting.

In order to absorb the output of our schools, it will be necessary for many chemical and chemical engineering trainees to go into some of the non laboratory jobs. Chemical training undoubtedly will be a great asset to men who enter the personnel, public relations, or purchasing departments. The plastics industry needs chemically trained people who will go into the legal end of the business, perhaps specializing in patent, commercial or labor laws. Market analysts with chemical backgrounds will be in demand and chemists with a knowledge of finance and ability to read balance sheets will find places with business firms. Admittedly, not all of these extra skills can be acquired during a typical academic course. However, a graduate who is interested in or familiar with these non-chemical fields, who can manage to enter them, and who will continue his training by night school or correspondence work, will find that his chemical background will be a great advantage in his progress.

As far as opportunity is concerned, it is just as important for an applicant to possess honesty, dependability and industry as well as the ability to work with his fellow chemists, as it is to have a fine technical training.

At present the Division of Paint, Varnish, and Plastics Chemistry of the American Chemical Society has a membership of almost 1200. Each of them undoubtedly wants an extra assistant and, if the right man were available, could probably have him. This field is growing and can absorb many chemically trained men, but particularly we should try to develop the areas not already occupied by chemists.

Advertising

Paul Slawter, vice president of The House of J. Hayden Twiss, Advertising, spoke briefly on the possibilities of positions in advertising publicity and promotion. He reminded the young chemists that all the theory and practice which they have in school is wonderful, and so is the inspiration given them there. But the schools fail to tell you about promoting things. One of the best things you can do is to promote things. However, to do this effectively, you should be a little bit better than average in describing things orally or in writing. If you are, then look into the fields of public relations and advertising. Investigate the trade papers. There are interesting jobs there. Opportunities are always available to young men with a good advertising background or who have worked in chemical publicity. Mr. Slawter offered to do what he could to advise or inform young chemists who are interested in these fields. His address: 205 East 42nd St., New York, N.Y.

Discussion

A few of the interesting points brought out in discussion were:

Comment: Ninety-four per cent of the industry converts chemical products into manufactured products. Example, textiles into dresses, vinyl into raincoats. There is tremendous economic waste here and a vast field for chemists. Thousands of these companies and others, such as candy manufacturers, etc., could profitably use chemists, if they only knew it. We should show initiative and do something about this.

Student, New York University: Much greater stress is now laid on the personality of students. How much can a student sacrifice in curricular activities for extra curricular activities?

Dr. Price: I do not think a student should sacrifice his academic work for outside activities. We are inclined to look at personality as something fixed from birth. One can change his personality and can learn. A reasonable amount of time spent on extra curricular activities is worth while.

Dr. Kuhn: Sometimes the people who interview you may give the wrong impression. Large industries are not looking for individualistic scientists such as you may read about in old books. They are looking for teamwork, or the ability of a young chap to work with a team to accomplish results. This may be wrongly interpreted as extra stress on extra curricular work.

Question: Are there opportunities in chemical sales for people with little chemical knowledge? Can you start with undergraduate training?

Answer: It was agreed that chemical salesmen may start in this field without graduate training. (For other suggestions, see article by Dr. Roger Adams in the February issue of THE CHEMIST.)

Question: Do you advise an immediate degree or night school with experience?

Dr. Sparks: If you are going to do something, it is better to do it full time.

Dr. K. W. Newman: I went to college at night while working for financial reasons. If anyone has the stamina to work eight or nine hours and then go to college three or four hours at night, there are definite advantages. I have no regrets.

Student, Long Island University: How do we crack the front doors of your organizations when we are looking for jobs?

President Flett: There are differences of opinion about how to get a position. You may be advised not to be too choosy, or on the other hand, to sacrifice and struggle to get the position you really want.

Dr. Meyer: One of the obvious answers is to give you the opportunity you seek by meeting the people whose doors you want to crash. Most of our speakers will be glad to stay a few minutes and meet students personally. This is one of the advantages of belonging to a professional organization.

A chemical engineer looking for employment: The emphasis on specialization is too great. If a chemist has had the right education, he should be able to go into a job and assimilate the details very fast. There is no reason why he cannot move from field to field. Do you think specialization is over-exaggerated for the young chemist?

Dr. Kuhn: I have always strongly advocated to university professors and others that fundamental principles should be taught. After you get a job, you can show your ability by becoming very proficient, but never neglect the over-all picture.

Question: What are the opportunities in advertising?

Mr. Slawter: There are an increasing number of companies using technical men in their advertising departments. Such positions offer opportunity to young people who have a flair to express the viewpoint of other people.

Question: What are the chances of opening our own laboratories instead of working for others?

Dr. Frey: Quite a number of men I have known, who had little capital, started as consultants in the food field. One should get acquainted with people in industry.

Dr. Meyer: One of the finest things young people can do is to stop being job-minded. Too many think only, "How can I get a job?" More should think as you do, "How can I get into business for myself?" There was an excellent article on this subject in the July 1949 issue of THE CHEMIST by Dr. Otto Eisenschiml.

Student from Polytechnic Institute of Brooklyn: The answers are vague so far as the question of how a stud-

ent can get started in industry is concerned. How does one get that experience the employment agencies call for?

Dr. Wakefield: So far as the sales field is concerned, the only requisite is that the young man seriously wants to sell the product. It sometimes requires persistence. If you know what industry you are interested in, and what you want to work at, then get past personnel to the laboratory men and convince them.

Dr. Meyer: The field of general finance and investment offers another opportunity for young men with technical training.

Industrial Research Today

Eger V. Murphree, president of Standard Oil Development Company, pointed out the magnitude of modern industrial research and the importance of the work of chemists to civilization, when he accepted the Perkin Medal of the American Section of the Society of Chemical Industry, at its meeting in New York, January sixth.

"The development of new or improved products, and new or improved techniques in our industries, provide for continuing high rates of employment. They increase our standard of living. Such developments are essential to our national defense, and are the life blood of our western civilization.

"Modern industrial research, particularly during the development stage, is largely a group effort," Mr. Murphree stated. In illustrating the expense of such large-scale research, he pointed to three major projects initiated by Standard Oil Development Company: The cost of the development of Butyl rubber was eleven million dollars. The Fluid Catalytic Cracking process now widely used in the petroleum industry cost nine million dollars by the time the first plant was completed; and to develop the process for making synthetic toluene, the final "T" in TNT entailed the expenditure of another two million dollars.

"Developments of the importance of those I have cited have been carried out by other companies in many fields. In most cases very substantial costs in research and development were involved before there was any assured commercial success. A company planning such a development must have the money required, and a great faith in research. In general this means that most new and basically important industrial developments must be carried out by large organizations, although important developments have and doubtless will continue to come from smaller firms and individuals.

Since many research and develop-

ment projects involving large expenditures, fail for one reason or another, the successful projects must pay for those which are not successful . . . The incentive for the financial risks involved is the expectation of profit from those which are successful."

The Perkin Medal for 1950 was presented to Mr. Murphree by Dr. Marston T. Bogert, Hon. AIC, senior past president of the Society of Chemical Industry. The dinner meeting, attended by over a thousand persons, was held jointly by the American Chemical Society, the American Institute of Chemical Engineers, the Electrochemical Society and the American Section of the Society of Chemical Industry. The chairman of the American Section of the Society, Dr. Gustavus J. Esselen, F.A.I.C., presided. Dr. Warren K. Lewis, Hon. AIC, former head of the Department of Chemical Engineering, Massachusetts Institute of Technology, spoke on "The Medallist and His Accomplishments."

The Perkin Medal was founded in commemoration of the Fiftieth anniversary of the coal tar color industry, 1856-1906. Mr. Murphree was the forty-fourth recipient of the medal. Introduced at the meeting were five men who had been present at the first Perkin Medal Award, which was made to Sir William Henry Perkin, October 6, 1906, at Delmonico's in New York: D. D. Berolzheimer; Dr. Marston T. Bogert, Hon. AIC; C. M. Joyce; Dr. August Merz, F.A.I.C., and Dr. M. C. Whitaker, F.A.I.C. Previous Perkin Medal winners who were introduced at the meeting included Dr. Milton C. Whitaker, F. A. I. C. (1923), Dr. E. C. Sullivan (1929), G. O. Curme, Jr. (1935), Dr. Warren K. Lewis, Hon. AIC (1936), Dr. J. V. N. Dorr (1941), and Dr. Francis C. Frary (1946).

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Dr. Alexander Schwarcman —the Chemist

James Ogilvie, F.A.I.C.

Chairman, Niagara Chapter, AIC

(An address given on the occasion of the presentation of Honorary AIC Membership to Dr. Schwarcman, at a meeting of the Niagara Chapter, AIC, at Canisius College, Buffalo, N.Y., Feb. 1, 1950.)

ARTICLE I of the Constitution of the AIC states that it shall be an objective to "Provide a means for the appropriate recognition of distinguished service to the profession," and so we now recognize the services of one who has already been honored by his fellow chemists for many scientific achievements.

It is not primarily for such achievements, however, that we honor him. In a lifetime of intense scientific work he long and faithfully strived in other ways to enhance the prestige of our profession and to extend its influence and usefulness.

Dr. Schwarcman

About forty years ago, Spencer Kellogg & Sons, Inc. made only three grades of linseed oil, but it was far-seeing in recognizing the need and value of research. It may be said that the founding of the Research Department dates from the inception of Dr. Schwarcman's employment. Then the knowledge of vegetable oils was meagre indeed, by present standards almost primitive. One knew a lot about their physical constants. There were data on saponification values, iodine values, specific gravities, refractive indices, viscosity, and there was Lewkowitch, but what did one know of their chemistry? Indeed, how could one get to know much about the chemical potentialities of such complicated long chain molecular mixtures which possessed all the mystery of the Sphinx? How

could a non-drying oil be converted to a drying oil and *vice versa*? What causes discoloration in film formation? What is the mechanism of polymerization? What is the true function of catalysts in hastening or retarding drying? How can edible oils be refined without impairing taste and odor? What is the real cause of rancidity? How can liquid oils be changed to edible semi-solids of the consistency of butter?

Research and Its Results

While men pondered these questions, Dr. Schwarcman went to work with an enormous zeal and an unusual passion for research. As a result of nearly forty years of research, what was originally thought to be a small province of endeavor became under Dr. Schwarcman's exploration a whole continent, and Spencer Kellogg & Sons, Inc., sponsor of this pioneering which has developed a long succession of new products, can now proudly and justly declare, "Outranking nearly all other factors in importance in the original success and subsequent growth of the company is the high value placed on extensive research work. The wisdom of this has been demonstrated by the leadership the company has displayed in replacing raw products with high quality special oils to meet the needs of an ever-expanding consuming industry. Nearly two-thirds of the company's facilities are required to supply specially refined products, many of them originating in its research laboratories . . ."

The company now manufactures eighty-five technical oils from linseed, soybean and castor (at least forty different brands of linseed oil) and about fifteen edible oils from soybean and coconut, etc.

The chemical industry can give many examples of being on the threshold of the need and quickly responding to the demand, but this cannot be better exemplified than by developments in the vegetable oil industry (1) The Japanese occupation of China cut off various raw materials and this dislocation of trade affected vegetable oils most severely. Dr. Schwarcman showed an almost uncanny ability to anticipate these shortages and devise ways of developing satisfactory substitutes. China wood oil is the premier drying oil of the paint and varnish industry since it produces varnishes which dry rapidly and hard, are waterproof and withstand caustic. Anticipating the shortage of supply from China, Dr. Schwarcman and his associates initiated research to transform castor oil, a non-drying oil, into a suitable substitute. It took two years, but was finally done by dehydrating castor oil to give a perfect drying oil which was marketed as Synthenol in time to meet the sudden stoppage of supply of 120-million pounds a year of China wood and perilla oils. The company sold huge quantities of this

substitute, which in World War II, was placed under strict priority by the War Production Board since the shipment of castor beans from Brazil was threatened by submarine attack.

The sharply reduced supply of castor oil then presented the problem of finding a substitute for it. This meant a product containing a hydroxyl group, and so Dr. Schwarcman and his co-workers investigated the possibility of hydroxylating the more plentiful linseed and soya bean oils. This was eventually accomplished with the production of two new oils—Solinox from linseed oil and Soy-Solinox from soya bean oil.

Since these products like castor oil are soluble in alcohol, they were extensively used as plasticising agents in protective coatings which were sorely needed in equipment used by the Armed Forces.

Another fascinating development which originated in the Kellogg Laboratories is based on the alcoholysis of linseed oil, a process which transforms the triglyceride to a monoglyceride, thus leaving two hydroxy groups free for esterification with suitable non-fatty dibasic acids—leading to the synthesis of two new esters, Kellin and Esskol, which form hard dry films and polymerize with great rapidity, thus providing excellent substitutes for China wood oil.

Mention should be made of at least one more discovery. True to form, the Kellogg Laboratories have once again asserted their modernity by doing what many other branches of organic chemical industry have attempted very successfully. That is to base derivatives on petroluem, which is both cheap and abundant. Last year, the company offered two new related products, Cykelin and Cykelsoy, derived from a petroleum derivative in combination with linseed and soya bean oil respectively. They give paints and varnishes increased drying and hardening qualities, and more resistance to water and alcohol.

The Humanitarian Quality

There is a pragmatic quality in almost all the research work which Dr. Schwarcman does. Practically every one of the products he brought forth was of immediate commercial value, not merely of academic interest.

Was it Lord Macaulay who wrote that the greatest civilizing agencies are those which abridge space? Others will maintain that these agencies are of a more spiritual nature. It is certain, however, that many of these agencies will fail to exert their most beneficent influence, if people are chronically hungry. The chemist has a benign role to play to devise ways to extend the supply and cut the cost of producing the world's foodstuffs, especially those of high nourishing and calorific value. This role has far greater consequences in world economy than to cater to esthetic tastes with dyestuffs or perfumes or

plastics or even paints since nation after nation, in desperation, is sacrificing liberty in the hope of getting something to eat. It has more of the humanitarian quality which blesses him that gives and him that takes, and so it is this phase of Dr. Schwarcman's work that I would commend to you most of all. I recall his telling of the enormous quantities of linseed oil which his company shipped to our Russian ally during the war to be used as a foodstuff. We may rest assured that that oil was refined to give it the highest purity and palatability. Linseed oil meal has long been in demand as a stock feed by farmers throughout the world, but how many know that the production of soybean oil meal has risen from 41,000 tons in 1929 to over 4 million tons today, and as a livestock feed is produced in greater volume than any other competitive product? Or that the catalytic hydrogenation of liquid vegetable and animal oils to render them semi-solid and improve odor, taste and keeping qualities is now an industry producing over half a million tons a year? Millions of people who cannot afford butter buy margarine and millions more cannot afford even that.

Professional Interests

As the INSTITUTE, we are concerned with another way in which Dr. Schwarcman has striven to enhance the prestige of our profession. We refer to his interest in the welfare of his fellow chemists and to his many years of untiring and arduous work to educate the public to a better appreciation of the contribution of the chemist to world progress. The research men who are associated with him are noted for their zeal, loyalty and, what is especially noteworthy, their long association with him. He has been a staunch supporter of the objectives of our INSTITUTE. He has given hundreds of lectures on chemical subjects to a wide variety of public audiences and has an unusual ability to present abstruse scientific thoughts in language which the layman can understand and enjoy. I am reminded of a letter which Faraday sent to Clerk Maxwell:

> "There is one thing I would like to ask you. When a mathematician engaged in investigating physical actions has arrived at conclusions may they not be expressed in common language as fully, clearly and definitely as in mathematical formulae? If so, would't it be a great boon to such as I do express them so, translating them out of their hieroglyphics, that we also might work upon them by experiment, I think that it must be so, because I've always found that you could convey to me a perfectly clear idea of your conclusions . . . If this is possible, wouldn't it be a good thing if mathematics . . . were to give us the results in this popular useful working state, as well as in that which is their own and proper to them?"

If scientists find it difficult to communicate with one another in a simple common medium how much more must it be for the chemist to express his ideas so that the uninitiated public will understand?

That Dr. Schwarcman has mastered this technique is shown by the way the public has recalled him so often to speak to them. In brief, then Dr. Schwarcman has richly earned the honor which the INSTITUTE is conferring on him for the wide and abundant variety of services he has rendered: to chemistry in extending the boundaries of our knowledge to his company in promoting its well-being and expansion; to the nation in developing products of great wartime value; to the community in so ably interpreting our science to the layman, and to the INSTITUTE for having set such an inspiring example to us all.

Dr. Schwarcman—the Man

Ward B. Arbury, L.L.B.

Attorney, Buffalo, New York

(A talk given on the occasion of the presentation of Honorary AIC Membership to Dr. Schwarcman, at a meeting of the Niagara Chapter, AIC, at Canisius College, Buffalo, N.Y., Feb. 1, 1950.)

THAT I am very fond of Dr. Schwarcman is witnessed by the fact that I have, on more than a dozen occasions, attended meetings in churches and similar places of congregation, at which he has spoken on the subject of "Atomic Energy." Greater love than that hath no man for his brother! Our relations have been close. We are both bachelors; we have many common tastes; we play poker in a weekly game, in which you either learn to know your opponent well or you lose your shirt—neither of us has had that misfortune yet. We have fished together, and we have travelled together from one end of the continent to the other. We have inspected vegetable-oil-extraction plants on the Pacific Coast and on the Atlantic Coast. We have dined in such disparate places as the Bohemian Club in San Francisco, the Stork Club in New York, and Jew Murphy's Saloon in Buffalo.

I shall confine this discussion to what seems to me to be the principal facets of Dr. Schwarcman's character: (1) an innate kindness, generosity and gentleness, (2) an insatiable curiosity, and (3) an indefatigable industry. To me the first facet is the most important side of the man. He loves nothing more than to do kind and generous things for his friends and for his friends' children. He thinks little of money. When the Spencer Kellogg's budget was read a few weeks ago and Dr. Schwarcman's annual salary was mentioned, he jumped up and said, "That is wrong. I do not earn that much money." After discussion, he agreed to allow

the item to stand as written, but the incident illustrates the fact that so long as he has money enough to buy himself an extra suit of clothes and have something left over with which to entertain his friends and buy presents for their children, he is completely satisfied. This spirit of genuine kindness which I find in him may be more important than I at first thought, because kindness is a quality common to all of the men of distinction in the scientific world with whom I have come in contact.

Curiosity

Dr. Schwarcman's sense of curiosity may be divided into two parts; one, a superficial curiosity; the other, a more profound curiosity. Linked to these is his memory, which is excellent. One of his professors in college said to him, "Alex, you have a poor mind, but an excellent memory. You should cultivate your memory." The professor was at least half-right in his observation. Dr. Schwarcman's splendid memory gives every indication that he has followed this advice. To be sure, he is at times absent-minded. A few weeks ago, he and I and two of his associates, were enjoying an excellent dinner and pleasant conversation. At eight o'clock, Dr. Schwarcman informed us that a distinguished visiting scientist was speaking at the university at eight-thirty. We hurried through our dinner, drove quickly to the University of Buffalo, and rushed breathlessly into the Lecture Room, only to find that the lecture was scheduled for the following week. This does not imply a poor memory. His memory probably remembered what he gave it to remember, and, if there was a mistake in the date, it was Dr. Schwarcman's fault, not the fault of his memory!

His superficial curiosity is amusing. I have watched the look of astonishment on the face of some gentleman whom Dr. Schwarcman has first met, when Dr. Schwarcman inquired of him brusquely, the name of his wife, how many children he has, where they go to school, what illnesses they have had, whether his family life is happy, etc! This is one of the methods Dr. Schwarcman uses to give his memory something to do during its idle moments!

His more profound curiosity is also interesting. When something occurs which he does not immediately understand, he will live with it for months, and perhaps years, until he achieves understanding. I recall my efforts to teach him to be a fisherman. Four years ago, he went on his first fishing-trip, a sport about which he knew nothing. Though others in the party succeeded in catching their share of black bass, Dr. Schwarcman caught nothing, which was difficult for him to understand. He asked me what it was that he did which was wrong and prevented him from catching any fish. I told him that the oldest

and truest maxim about bass fishing is that in order to catch bass after the first of July, the fisherman has to be smarter than the fish. This did not make much sense to him, who thought it one of my rather poor jokes. How could it be possible, he reasoned, that a poor fish who had never had any educational advantages at all, could outsmart a man who was a graduate of Grenoble University?

Nothing further was said on the subject for four years, during which we fished together for a week or two each year. I could hear him asking, from time to time, questions of others about how he should hold the rod, what kind of line and hook he should use, and I knew he was pondering the subject without reaching any conclusion. Last Summer, when he still was making no progress, he again asked me to tell what he should do to be saved as a fisherman. I then gave him the facts of life about the black bass. They hibernate most of the winter in the mud at the bottom of the lake; they commence to move around in the early Spring, and from then until the end of the spawning season early in June they are easy prey to any dumb angler. The reason is obvious. During that period, they are either ravenously hungry or madly in love, and suffering from the complete loss of judgment common to most forms of animal life under such circumstances. But after July first, when the bass season legally opens, the situation is quite different. The spawning season is over; the bass are tired, happy, well-fed and lazy, and have little if anything to take an interest in except loafing around until Fall. After July first, a bass will not trouble himself to strike a plug cast in his direction unless it falls directly on his nose, and he is not particularly interested in live bait (most of our fishing is "still" fishing, using minnows for bait), except for the fun he can have playing cat-and-mouse with a minnow, and occasionally ingesting one. Under these circumstances, the fisherman has a duel of wits with the fish. At the first indication of bass interest in bait, the fisherman must try to determine whether the bass will play with the minnow, crush it and leave it, or will he use it for food? The answer is determined by the fisherman on the basis of the actions of bass previously caught or missed that day, by the feel of the line as the bass attacks the bait, and by that sixth sense which the experienced fisherman develops. On the basis of his analysis, he tries to find the precise moment to strike and fix the hook. If he makes the catch, it is because he has outwitted the fish.

After I had concluded this discourse, I saw that at long last, Dr. Schwarcman had seen the light. Fishing became a mental exercise, a battle of wits, a challenge to ingenuity, just

as a problem in the laboratory would be. From that time, Dr. Schwarcman has been an enthusiastic fisherman. This incident illustrates his ability to keep a problem alive in his mind until he reaches a satisfactory solution.

Dr. Schwarcman's industry and energy are well-known to everyone associated with him. In passing, one extraneous matter seems to be the very important part played by the late Spencer Kellogg in the development of the capacities of our honor guest. It was he who brought Dr. Schwarcman to the Kellogg Company nearly forty years ago. I saw Mr. Kellogg once many years ago under circumstances which left a most profound impression on me. As a young lawyer, I was in the Criminal Part of the City Court of Buffalo, when Mr. Kellogg appeared before the Judge, charged with having driven his automobile through a red signal light. The judge seemed to be willing to laugh the matter off and dismiss the charge but Mr. Kellogg would have none of it. He said to the Court that he had done a very careless thing, that he was guilty beyond any question, and that he should be punished. The Court thereupon imposed a fine of $5.00. Mr. Kellogg was an extraordinary man. He realized that citizenship in a free country not only entitled one to certain rights and privileges, of which we hear so much today from those in public office, but also carried with it very definite duties and obligations of good citizenship. It was a fortunate day when he and Dr. Schwarcman joined forces. Mr. Kellogg was in effect the catalyst which brought together the great resources of his Company, his own vivid imagination and resourcefulness, and the ability, the energy and the industry of Dr. Schwarcman. The result has been of inestimable value to the entire vegetable-oil industry.

In conclusion, I shall add a word about Dr. Schwarcman's tremendous value to the Kellogg Corporation as a salesman. His word is accepted very generally among buyers of vegetable-oil products as the last word in respect to what the product will do and why it will do it. He knows so much about his subject that in discussing it he can indulge in the luxury of understatement and still make his sale. I am confident that many customers of Spencer Kellogg depend almost exclusively on Dr. Schwarcman for guidance in the use of vegetable-oil products.

Sterwin Appointment

Sterwin Chemicals Inc., has named William Miles supervisor in charge of the certified food color plant operated for the company by the Hilton-Davis Chemical Company Division of Sterling Drug Inc., Cincinnati, Ohio. The complete line of certified food colors is marketed under the brand name of "Parakeet."

Presentation

President Lawrence H. Flett, AIC

(On the occasion of the award of Honorary AIC Membership to Dr. Alexander Schwarcman.)

THE AMERICAN INSTITUTE OF CHEMISTS is devoted to the service of the chemical profession. It seeks to give chemists a better understanding of their work and its relationship to science and industry. It strives to give the public a better understanding of how chemists work and what they accomplish.

Chemists have difficulty in discussing technical matters with the public. In the first place, chemists have had little time to study the art of expression; and in the second place, they have learned to speak with a technical language which is not understood by people who do not have a specialized technical education.

The recipient of Honorary membership has had an uncanny ability to put the complex matters of science into words which any layman can understand. His discussions before many gatherings, for a greater number of years than he would care to admit, have brought about a better understanding of the chemical profession. THE AMERICAN INSTITUTE OF CHEMISTS has recognized this service by electing him to Honorary Membership.

It is hard to escape something a little deeper in this presentation. The recipient, through his sincere and true friendships, has been of great service to the science of chemistry and to his fellow chemists. These friendships are a vital part of professional activity. They are a precious source of knowledge and productive help.

Dr. Alexander F. Schwarcman, Fellow of THE AMERICAN INSTITUTE OF CHEMISTS, through the kindness of the Niagara Chapter, I have been invited here to participate in this meeting which recognizes your contributions to the chemical profession, and to pass on to you the certificate which recognizes you as an Honorary Member of THE AMERICAN INSTITUTE OF CHEMISTS.

Do Not Blame the Scientists

(A Report)

After gratefully accepting the award of Honorary AIC Membership to him, Dr. Alexander Schwarcman spoke earnestly on a subject of concern to all scientists who are interested in good public relations.

"Many persons," Dr. Schwarcman revealed, "are blaming scientists for

the prevailing unrest in the world. They point to poison gas, atomic bombs, and other creations of scientists as directly responsible for wars.

"There were terrible wars and destruction long before modern chemistry," Dr. Schwarcman pointed out. "The campaigns of Alexander of Macedonia with his fire-throwing engines and his poisoned lances in his pursuit of Darius were not a pretty story. The Crusades were not a pretty story Neither were the murderous wars of Genghis Khan nor Napoleon's campaigns. And, all of those were fought without dynamite, TNT, poison gas, or atomic energy.

"All we can say is that man has remained the same fighting animal and was not evolved by modern science. The fact that the modern savage continues to behave the same oniy uses more modern instruments of destruction, shows that man has not changed, science or no science.

"Atomic energy, the greatest conquest of man, was not meant for human destruction. Its potential possibilities for the benefit of mankind in health, food, and industry, possess possibilities for great good.

"Perhaps our efforts should be directed toward improving man, instead of stopping science."

The Spring meeting of the American Oil Chemists' Society will be held in Atlanta, Georgia, May first to third, at the Atlanta Biltmore.

A Column of Advice on Personal Problems

Please send all requests to Chemists' Advisory Committee, c/o The Chemist, 60 East 42nd Street, New York 17, N.Y.

Inquiry No. 27

I am interested in starting a business of my own. I have made a metal polish which many of my friends have tried and found better than anything they have ever used. I have a few thousand dollars which will be sufficient for equipment, raw materials, containers, etc., and overhead expenses for a few months.

Since I have never been in business for myself, I wonder if you wuld advise me how to proceed to establish such a new business.

Answer

The committee suggests that you contact the New York State Department of Commerce. This Department has excellent information available and is prepared to give specific advice, free of charge, on the problems of establishing a small business. The committee will, of course, be glad to offer suggestions on specific points which may not be covered by the Department of Commerce.

Inquiry No. 51

I have been employed as a research chemist by a large company for five years. For personal reasons I would like to make a change. Because I have heard many concerns are decreasing their staffs and any drop in business will aggravate this condition, I wonder whether this is the proper time for such a change.

Answer

In the opinion of the committee, any time is a good time to make a change, provided that your reasons for making the change are soundly conceived. If you have something positive to offer in the way of training and capabilities which would be more valuable to a new employer and also give you an opportunity to be more effective, you should not be unduly concerned with current business conditions.

Inquiry No. 56

I am having difficulty in obtaining a new position. Certain facts lead me to believe that my former group leader, from whom I parted under disagreeable conditions, has made unfair statements about me to prospective employers who have 'phoned him. I would appreciate your advice on this matter.

Answer

If you will contact the Chemists' Advisory Committee, arrangements will be made to have one or two members of this committee investigate the matter, and, if in the opinion of the committee, your suspicions are substantiated, the committee will approach your former group leader's superiors and present the facts.

A similar problem was recently investigated by the committee and was resolved in a satisfactory way to all concerned. We expect that this approach will be effective in obtaining fair treatment for you.

Ries Wins Ipatieff Prize

Dr. Herman E. Ries, Jr. F.A.I.C., head, Physical Department, Sinclair Refining Company, Harvey, Illinois, will be presented with the $3000 Ipatieff Prize in Chemistry at the Houston meeting of the American Chemical Society. Dr. Ries was awarded the prize for his work on the physical chemistry of catalytic materials used in the petroleum industry.

PLAN NOW

To attend the AIC Annual Meeting, May 11-12.

Opportunities

Inorganic Physical Chemist, Ph.D.

Experienced in modern industrial research and development. Qualified in laboratory techniques and pilot plant design and operation. Familiar with analysis, electro-chemistry, vacuum technique, liquefied gases, corrosion, evaporation, unit operations a.o. Technical reports, economic surveys, patent studies. Excellent scientific and general background and fifteen years experience with major company. High offices in professional organization. Fellow, AIC. Desires responsible position in development research or in consulting or technical service field. Please reply to Box 30, THE CHEMIST.

Organic Chemist, Ph.D. 1945

Training in pharmaceutical and organic medicinal chemistry. Four years diversified industrial experience in organic research and syntheses from laboratory through pilot plant. On fellowship at Eastern medical school at present. Prefer position in pharmaceuticals. Publications. Sigma Xi. Age 30, family. Fellow, AIC. Location immaterial. Available on short notice. Please reply to Box 32, THE CHEMIST.

***Wanted:* Organic Chemist**

Organic Chemist, M.S., 25 to 30 Experience with cellulose ester films, photography, lithography, and azo dyes. Send resume to Keuffel & Esser Co., Hoboken, N.J.

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February Meeting

The 264th meeting of the National Council of THE AMERICAN INSTITUTE OF CHEMISTS was held February 8, 1950, at 6:00 p.m. at The Chemists' Club, New York, N. Y. President Lawrence H. Flett presided.

The following councilors and officers were present: Messrs: E. Farber, L. H. Flett, K. M. Herstein, F. A. Hessel, M. J. Kelley, E. H. Northey, R. P. Parker, E. W. Rivise, M. Siegel, Miss F. E. Wall, J. R. Withrow, and L. T. Work. J. R. Minevitch and V. F. Kimball were present.

In the absence of the Secretary, the Treasurer served in that capacity.

The minutes of the preceding meeting were approved.

President Flett read letters from

several of the Medalists who had been notified of Honorary membership.

The letter that was sent out by the President to INSTITUTE members brought an immediate response of more than thirty-five applications, some of which were processed in time for this meeting. The President asked Councilors to keep in mind their responsibility as officers to see that as many qualified members as possible are brought into the INSTITUTE; and to contribute to the literature of the profession as well as to encourage others to contribute.

President Flett reported that plans for the Annual Meeting were progressing satisfactorily, with Dr. Work as chairman of the Program Committee. Speakers at the Medal Banquet will be Dr. Charles Allen Thomas and Dr. Raymond E. Kirk. The Rev. Joseph B. Muenzen, F.A.I.C., will deliver the invocation.

The Secretary's report, showing a total of 2432 members, was presented. With deep regret, the following deaths were recorded: Hugh Martin Huffman, F. A. I. C., January 4, 1950; Charles S. Reeve, F.A.I.C., January 6, 1950; and George C. Supplee, November 7, 1949.

The Treasurer's reports for the month of January, 1950, and a quarterly comparative report for the same period this year and last, were accepted.

President Flett asked Council members to suggest additional advertising of interest to chemists for publication in THE CHEMIST.

The Treasurer announced that the Chicago Chapter had refunded the unused balance of the Annual Meeting appropriation for 1949, amounting to $331.39.

Dr. Work, chairman of the Program Committee for the Annual Meeting reported that plans were being prepared for an especially interesting program. The general theme will be the progress of chemists at the Mid-Century point, and the outlook for the future.

Dr. Kelley, chairman of the Committee on Arrangements for the Annual Meeting, reported that preparations were going ahead.

Mr. Herstein reported for the New York Chapter.

Mr. Siegle reported for the Baltimore Chapter.

Dr. Farber reported that the Washington Chapter liked small, informal meetings with the personal touch, and that Chairman Read believes in giving Chapter members work to do between meetings. He is preparing against a possible future depression which would affect chemists. He has recommended that AIC members of the Washington Chapter be available as counsellors to young men and students.

Dr. Parker stated that the New Jersey Chapter had organized teams of three or four men each to speak

at local colleges. They also serve as counsellors to students.

Mr. Rivise announced that the next meeting of the Pennsylvania Chapter would be held jointly with the American Chemical Society.

Reporting for the New Jersey Chapter, Dr. Parker announced that a meeting will be held on February 27th, with a panel discussion on "Safe Practices in Industrial Chemical Research."

The following new members were elected:

FELLOWS

Berman, Lawrence U.
Assistant Organic Chemist, Chemistry and Chemical Engineering Department, Armour Research Foundation, 35 W. 33rd St., Chicago 16, Ill.

Broeg, Charles B.
Sugar Technologist, Sugar Branch, PMA, USDA, Washington, D.C.

Fettes, Edward MacKay, Jr.
Manager, Development Department, Thiokol Corporation, Trenton 7, N.J.

Gilman, Henry H.
Manager & Owner, Resinous Chemical Mfg. Corp., 20 Courrier Place, Rutherford, N.J.

Goppelt, Helen M.
Research Chemist, Kepec Chemical Corp., POB 782, Milwaukee 1, Wis.

Greene, Albert J.
Patent Solicitor - Patent Department, Monsanto Chemical Co., Rubber Service Division, Nitro, West Virginia.

Knock, Frances E.
Research Associate in Pharmacology, University of Illinois, Chicago, Illinois.

Krehl, Willard A.
Assistant Professor of Nutrition, Yale University, New Haven, Conn.

Legler, John L.
Manager, Pharmaceutical Department, National Aniline Division, Allied Chemical & Dye Corp., Buffalo, New York.

Maple, Frank E.
Assistant Manager, Industrial Chemical Division, Commercial Solvents Corp., New York 17, New York.

Parker, Barbara M.
Entomologist, Miner Laboratories, Chicago 6, Illinois.

Pincus, Leo I.
Research Chemist — Technical, Water Service Laboratories, Inc., New York 27, New York.

Sebrell, Lorin B.
Director of Research, Firestone Tire & Rubber Co., Akron, Ohio.

Volwiler, Ernest H.
Executive Vice President, Abbott Laboratories, North Chicago, Ill.

MEMBERS

Barry, William D.
Assistant Director, Analytical Department, Foster D. Snell, Inc., New York 11, New York.

Michaels, Alan S.
Assistant Professor, Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge 39, Mass.

Moore, Richard L.
Assistant to President, Foster D. Snell, Inc., New York 11, N.Y.

Sherman, Milton
Chief Chemist, Analytical Lab., Silverstein & Pinsof, Inc., Chicago, 22, Illinois.

ASSOCIATE

Schwaikert, Ralph A.
Plant Chemist, Oakite Products, Inc., Milltown, New Jersey.

REINSTATED TO FELLOW

Sweet, Harold A.
Sales Development, General Dyestuff Corporation, 435 Hudson Street, New York, N.Y.

RAISED FROM MEMBER TO FELLOW

Boyd, Robert B.
Technical Sales, Market Research & Development, Oldsbury Electro-Chemical Co., New York 6, N.Y.

There being no further business, adjournment was taken.

Local Chapter News

C. P. Neidig, F.A.I.C.

Niagara

Chairman: James Ogilvie
Vice Chairman, Bert Wetherbee
Secretary-Treasurer,
Dr. M. H. Fleysher
Representative to National Council,
Rev. James J. Pallace, S.J.
Reporter to The Chemist,
Lyle H. Mahar

The Niagara Chapter held a dinner meeting on February 1, 1950, at Canisius College, Buffalo, N.Y., at which Honorary AIC Membership was conferred on Dr. Alexander Schwarcman, F.A.I.C., research director and vice president of Spencer Kellogg and Sons, Inc. A reception preceded the dinner. James Ogilvie, chairman of the Chapter, spoke on "Dr. Schwarcman, The Chemist." Ward B. Arbury, attorney, spoke on "Dr. Alexander Schwarcman, The Man." President Lawrence H. Flett, AIC, presented the Honorary Membership to Dr. Schwarcman. (See pages 93-102).

Chicago

Chairman, Dr. Herman S. Bloch
Chairman-Elect, Bruce M. Bare
Vice Chairman, W. B. Hendry
Secretary-Treasurer,
Dr. Glen Hedrick
Representative to National Council,
Gene Abson

The Chicago Chapter played a very vital part in the Second Annual Chic-

ago Area High School Career Conference, which is sponsored jointly by the *Chicago Suntimes,* the Chicago Technical Societies Council and the Illinois Institute of Technology.

Dr. Herman S. Bloch, chairman of the Chicago Chapter, was general chairman, while Dr. Gustav Egloff, past president AIC, was chairman of the Committee on Cooperating Agencies, and B. S. Friedman served as chairman of the Speakers Committee. Messrs. Robert F. Baldaste, Otto Eisenschiml, William I. Harber, Bernard E. Schaar and Vandeveer Voorhees served on committees or participated in the counseling sessions. A total of 209 speakers and 105 chairmen were required to handle the sixty-three subjects covered.

The total recorded classroom attendance was approximately 4,750. Students were registered from forty-four Chicago public high schools, forty-six Chicago parochial high schools, twenty-eight suburban public high schools, twenty-one private high schools in the Chicago area, nine high schools from Indiana, Michigan, Wisconsin, and other neighboring states, and seventeen colleges—a total of 165 schools.

You'll be interested in knowing that chemistry plus chemical engineering ran first in popularity, with journalism and writing, and dramatics close behind. Teaching, medicine and psychology followed.

The chairman for the 1950 Career Conference will be B.S. Friedman, F.A.I.C.

A meeting of the Chicago Chapter was held February tenth, and was well attended. The topic for the evening was "Hiring Practices in the Chemical Industry." This consisted of a panel of four speakers, who presented the subjects in the following order:

"Application Blanks," Dr. A. B. Cramer, F.A.I.C., F & F Laboratories; "Men over Forty-Five," H. F. Schwarz, F.A.I.C., Sherwin-Williams Company; "Employment Contracts," Dr. John A. Dienner, F.A.I.C., Brown, Jackson, Boettcher and Dienner; "Discriminatory Practices," A. J. Weiss, Anti-Defamation League.

Questions and comments from the floor indicated the aroused interest of the audience in these subjects, on which not much information has been published. The papers will appear in an early issue of THE CHEMIST.

Pennsylvania

Chairman, Hillary Robinette, Jr.
Vice Chairman, C. P. Neidig
Secretary-Treasurer, John H. Staub
Representative to National Council, Charles W. Rivise

February sixteenth there was a joint meeting of the Philadelphia Section of the American Chemical Society and the Pennsylvania Chap-

ter, AIC. The speaker was Dr. J. C. Warner, president-elect of Carnegie Institute of Technology, who spoke on "The Contribution of Science and Scientists to the Goals of Civilization." Dr. Warner emphasized the professional side of the chemists' career and the need for technical men in general to play a larger part in civic affairs.

New England

The first meeting of the newly created New England Chapter will be held March 20th, at 12:30 p.m. at The Engineers Club, 96 Beacon Street, Boston, Mass. At this meeting President Lawrence H. Flett, AIC, will present Honorary Membership in the Institute to Dr. Gustavus J. Esselen, vice president, United States Testing Company, Inc., Esselen Research Division, Boston. Reservations for the luncheon should be sent to John B. Calkin, University of Maine, Orono, Maine.

New Cancer Study

Dr. Ed. F. Degering, F.A.I.C., assistant chairman of chemistry and chemical engineering at Armour Research Foundation, announces that a new study at the Foundation will be to discover what accelerates the abnormal cell growth we call "cancer." The investigation will attempt to verify results obtained by Dr. Robert R. Citron with a chemical obtained from rabbit cancer tissue which apparently stimulates the growth of cancer.

For Your Library

Philosophy of Mathematics and Natural Science

By Hermann Weyl, Princeton University Press. X + 311 pp. $5.00.

The first part, about two-thirds of this book, is based on a handbook article which Weyl wrote in 1926. It would have been less justified at that time than it is now to draw the attention of chemists to these discussions of "highly theoretical" matters. We have, since 1926, become more deeply convinced of the importance which purest theory has for deeply involved practice. Chemists have learned that it pays to become familiar with mathematics which authors formerly did not dare to introduce into chemistry textbooks without a meek apology. Now that we use the most complicated modern kinds of apparatus in our work, we cannot be content with the mere elements of mathematics.

However, this is not the book from which to start when learning higher mathematics. Weyl intended "it to serve as a guide to the literature listed . . .", and this is particularly true for its mathematical side, which is not confined to Part I, Mathematics, but permeates the entire presentation. The problems of relativity, of space and time, of measuring, forming concepts, and the physical picturing of the world, treated in the main part of the book, lead to the newly added Appendices. Only one of them deals specifically with chemistry. After discussing the representation of the structure of benzol, the author draws the following conclusion: "The moral of this story is evident: do not take too literally such preliminary combinatorial schemes as the valance diagrams, useful as they are as a first guide in a seemingly incoherent mass of facts. A picture of reality drawn in a few sharp lines cannot be expected to be adequate to the variety of all its shades. Yet even so the draftsman must have the courage to draw the lines firm." (p 274).

The philosophical discussion ranges from mathematics to the problems of biology in general. It is not easy reading, but the effort to follow the precise and clear exposition is highly rewarding.

—Dr. Eduard Farber, F.A.I.C.

Organic Reactions

Roger Adams, F.A.I.C., Editor-in-Chief. John Wiley & Sons, Inc. 1948. 428 *pp.* $6.00.

This is Volume IV in the "Organic Reactions" series. Ever since 1942 when the first volume appeared, this series has proved its usefulness, until it has become recognized as being practically indispensable to the organic chemist.

The present volume deals with the diene synthesis, the preparation of amines by reductive alkylation, the acyloins, the synthesis of benzoins, the synthesis of benzoquinones by oxidation, the Rosenmund reduction and the Wolff-Kishner reduction. Each chapter is written by a specialist (or specialists) in the field.

The material is presented in a well organized form, and conforms entirely to the standard of excellence set by previous volumes.

Anyone engaged in preparative organic chemistry will certainly want to add this volume to his library.

—William H. Van Delden, F.A.I.C.

The Chemistry and Physiology of Growth

Edited by Arthur K. Parpat. Princeton University Press, 1949. 6½" x 9½". $4.50

This volume contains ten contributions by ten prominent authors. According to the editor's Foreword, "This book is an outgrowth of a conference on 'The Chemistry and Physiology of Growth' that was held in Princeton in September 1946 in celebration of the Bicentennial of Princeton University. Since the conference, the authors have had the opportunity to change their papers in the light of comments made then, or to comment on the works of others."

Of considerable interest to chemists, especially those in the biological field, will be Chapter I (Enzymes and the Synthesis of Proteins) by J. H. Northrop, Chapter III (Plant Growth Hormones), by K. V. Thiman, Chapter IV (Unidentified Vitamins and Growth Factors) by K. Folker, Chapter VI (Cellular Metabolism and Growth) by E.S.G. Barron, Chapter IX (Neoplastic Abnormal Growth) by C. P. Rhoads, and Chapter X (The Adrenal Gland a Regulatory Factor) by C. N. H. Long. The book contains a Name Index and a brief Subject Index.

—Dr. Henry Tauber, F.A.I.C.

Chemical Books Abroad

Rudolph Seiden, F.A.I.C.

• Verlag Editio Cantor, Aulendorf/Wuertt.: *Die Uebermikroskopie,* by Bodo v. Borries, 1949, 416 pp., 225 ill. (DM 48). An authority in the field of electron microscopy gives us a thorough and fascinating introduction into the new electron microscope, its limitations, and, most inspiring to scientific-minded readers, a survey of the results obtained to date with its help in metallurgy, ceramics, chemistry (dyes, emulsions, fibers, etc.), biology, and medicine. There are 1500 literature sources listed.

• Rascher Verlag, Zuerich: *Grundlagen der Werkstoffchemie,* by E. Brandenberger. 1947, 298 pp., 98 ill. Crystal chemistry is used to explain the chemical constitution and properties of metals, alloys, hydrides, carbides, nitrides, sulfides, minerals, and natural as well as synthetic organic compounds used in industry and laboratory.

• S. Hirzel Verlag, Leipzig: *Kurzgefasste Werkstoffkunde,* by Paul Schimpke. 1948, 159 pp. 26 ill. (SFr. 6.80) A brief review of facts and figures concerning such industrial materials as iron, nonferrous metals, alloys, wood, and other building materials, leather, rubber, plastics, etc.

• Springer-Verlag, Vienna: *Die Sulfonamidtherapie,* by Hans Dechant, 1949, 126 pp. (S 1.95) A good review of modern sulfonamide therapy, dedicated mainly to the use of sulfa drugs in the treatment of various infectious diseases.

• Benno Schwabe & Co., Basel: *Uebersicht der gebraeuchlichen und neueren Arzneimittel,* by E. Bernoulli and H. Lehmann, 7th ed., 594 pp. (SFr. 15.) A compilation of the specialties and official drugs used in Switzerland, their compositions, properties and uses in human medicine.

• Dr. Dietrich Steinkipff, Frankfurt a.M.-Griesheim: *Die Thermodynamik des Waerme-und Stoffaustausches in der Verfahrenstechnik,* by Werner Matz, 1949, 356 pp., 114 ill. (DM 28.) This is not just another "theoretical" book on thermodynamics, but one which, in addition, is intended to be helpful to the chemist and engineer in chemical, oil, textile, paper, sugar, and other industries where the problems of heat and material exchanges are of greatest practical importance.

Booklets

"Hercules Synthetic Resins." 20-page brochure. Hercules Powder Company, Wilmington, Delaware.

"Hypermatic Compressible Valve Lubricant Energizable for Automatic Action." 4-page bulletin. Nordstrom Valve Division, Rockwell Manufacturing Co., 400 N. Lexington Ave., Pittsburgh 8, Pa.

"*Vanton flex-i-liner* non-corrosive Pump." Information sheet. Emil Greiner Co., 20-26 N. Moore Street, New York, N.Y.

"Specifications for Heavy Duty Finishes for Maple, Beech and Birch Floors," Request them from Foster D. Snell, Inc., 29 West 15th Street, New York 11, N.Y. or from the Maple Flooring Manufacturers Association, 46 Washington Boulevard, Oshkosh, Wisconsin.

"Catalog No. 7. Learned and Scientific Scandinavian Literature in the Major Languages. Books published July 1948—Jan. 1949," and "Novi Libri 1949 Catalog." Einar Munksgaard, 6, Norregade, Copenhagen, Denmark.

"Coleman No. 6-054 Electronic Power Supply. Bulletin B-218." Coleman Instruments, Inc., Maywood, Illinois.

"New, Low-Cost Radiation Detector—Geiger Counter." Information sheet. The Nucleonic Corporation of America, 499 Union Street, Brooklyn 31, N.Y.

"Vari-Temp Ductility Apparatus for Asphalt Industry." Information sheet. Precision Scientific Co., 3737 W. Cortland St., Chicago 47, Ill.

"Trifluoracetic Acid." Brochure. Minnesoto Mining & Manufacturing Co., New Products Division, Saint Paul 6, Minn.

"Sixth Semi-annual Report of the Atomic Energy Commission, July 1949." Deals with medical and biological applications of nuclear energy, and highlights of Commission's activities. U.S. Atomic Energy Commission, Washington 25, D.C.

Condensates

Ed. F. Degering, F.A.I.C.

Armour Research Foundation

Research is the process of making mistakes intelligently and profiting by such mistakes.

—C. F. Kettering

Two Texas plants are now producing acetaldehyde commercially through the catalytic oxidation of hydrocarbons.

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If you work for a man, in heaven's name work for him. Speak well of him and stand by the institution he represents. Remember, an ounce of loyalty is worth a pound of cleverness. If you must growl, condemn, and eternally find fault, why not resign your position and then when you are on the outside, damn, damn, to your heart's content; but as long as you are a part of the institution, don't condemn it. If you do, the first high wind that comes along will blow you away and you will never know why.

—Elbert Hubbard

A comparison of egg production records of chickens housed in an aluminum-roofed poultry house and those housed in a pen roofed with another metal, revealed that the aluminum-protected chickens laid more eggs than those in the other building. It was also noted that the "fryers" in the cooler aluminum-roofed building increased weight faster than their neighbors doing a slow burn next door.

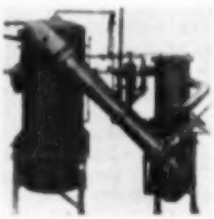
Tetraethylthiuram disulfide (Antabus), according to Ayerst, McKenna, and Harrison Limited, when ingested orally in amounts of 0.75 to 1.0 grams for two to three days and as little as 0.6 of a gram per day subsequently, causes acute intolerance for alcohol.

Cellulose acetate butyrate may replace cellulose nitrate in the fabrication of spectacle frames.

Calco Appointments

K. H. Klipstein, F.A.I.C., assistant general manager in charge of the Technical Department, Calco Chemical Division, American Cyanamid Company, announces the appointment of Dr. W. A. Raimond, F.A.I.C., as departmental technical director for Dyes, and Dr. W. P. Munro, F.A.I.C., as chief chemist, Department G of Dyes Manufacturing Division. Dr. Raimond holds the B.S. degree from Rhode Island State College, and the M.S. and Ph.D. degrees from Rutgers University. Dr. Munro received the B.S. and M.S. degrees from the University of Iowa and the Ph.D. degree from Princeton University.

Heyden Chemical Corporation, 393 Seventh Avenue, New York, N.Y., announces that John Paul Remensnyder has been elected president to succeed the late Bernard R. Armour.



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National Council Meeting

The next meeting of the National Council, A.I.C., will be held April 12, 1950, at The Chemists Club, New York, N.Y.

AIC Annual Meeting

The Annual Meeting, AIC, will be held May 11th and 12th at the Hotel New Yorker, New York, N.Y. Dr. Walter J. Murphy, F.A.I.C., will be presented with the 1950 Gold Medal of the Institute. Speakers will include Dr. Raymond E. Kirk, vice president, AIC, and Dr. Charles Allen Thomas, F.A.I.C., executive vice president, Monsanto Chemical Company. Dr. Maurice J. Kelley, F.A.I.C., of Nopco Chemical Company, Harrison, N.J. is chairman of the Committee on Arrangements. Dr. Lincoln T. Work, F.A.I.C. is chairman of the Program Committee. Theme: "The Chemist at the Mid-Century Point."

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